

WHAT IS CLAIMED IS:

1. A noise filter comprising:  
a laminate body including magnetic layers, line conductors, and ground conductors wherein one of the line conductors and the ground conductors is disposed in each of a plurality of interfaces between the magnetic layers such that one line conductor alternates with one ground conductor in lamination, with one ground conductor arranged on a top magnetic layer and another ground conductor arranged on a bottom magnetic layer, and the line conductors disposed between the magnetic layers being serially connected; wherein  
the magnetic layer is made of a magnetic oxide and causes little or no attenuation of an electrical signal within a frequency range below a frequency at which a magnetic loss occurs and attenuates an electrical signal within a frequency range where the magnetic loss occurs.
2. A noise filter according to claim 1, wherein the frequency at which the magnetic loss of the magnetic oxide increases to above 1 is approximately equal to or greater than about 80 MHz.
3. A noise filter according to claim 1, wherein the line conductor has a meandering shape.
4. A noise filter according to claim 1, wherein the line conductor has a spiral shape.
5. A noise filter according to claim 1, wherein the line conductor is disposed between the laminated magnetic layers, and is coiled around a center axis aligned in the direction of lamination of the magnetic layers.
6. A noise filter according to claim 1, wherein a dielectric layer is sandwiched between the magnetic layers.

7. A noise filter according to claim 1, further comprising dielectric layers having the ground conductor sandwiched therebetween and magnetic layers having the line conductor sandwiched therebetween.

8. A noise filter according to claim 1, wherein the magnetic body includes a hole, which is filled with one of glass, a resin, and a mixture of glass and a resin.

9. A noise filter according to claim 1, wherein the magnetic oxide is a Ni-Cu-Zn ferrite.

10. A noise filter comprising:  
a laminate body including magnetic layers, line conductors, and ground conductors wherein one of the line conductors and the ground conductors is disposed in each of a plurality of interfaces between the magnetic layers in a manner such that one line conductor alternates with one ground conductor in lamination, with one ground conductor arranged on a top magnetic layer and another ground conductor arranged on a bottom magnetic layer, first ends of the line conductors disposed between the magnetic layers being connected to different signal input electrodes, and second ends of the line conductors being connected to different signal output electrodes; wherein  
the magnetic layer is made of a magnetic oxide, and the frequency at which the magnetic loss of the magnetic oxide increases to above 1 is approximately equal to or greater than about 80 MHz; and

the magnetic layer causes little or no attenuation of an electrical signal within a frequency range below a frequency at which a magnetic loss occurs and attenuates an electrical signal within a frequency range where the magnetic loss occurs.

11 A noise filter according to claim 10, wherein the line conductor has a meandering shape.

12. A noise filter according to claim 10, wherein the line conductor has a spiral shape.


13. A noise filter according to claim 10, wherein the line conductor is disposed between the laminated magnetic layers, and is coiled around a center axis aligned in the direction of lamination of the magnetic layers.

14. A noise filter according to claim 10, wherein the line conductors disposed between the magnetic layers are different from each other in characteristic impedance.

15. A noise filter according to claim 10, wherein a dielectric layer is sandwiched between the magnetic layers.

16. A noise filter according to claims 10, wherein the magnetic body includes a hole, which is filled with one of glass, a resin, and a mixture of glass and a resin.

17. A noise filter according to claim 10, wherein the magnetic oxide is a Ni-Cu-Zn ferrite.

18. A noise filter comprising:   
a magnetic body and at least two line conductors running alongside each other with a space maintained therebetween on a major surface of the magnetic body; wherein

the magnetic body is made of a magnetic oxide, and the frequency at which the magnetic loss of the magnetic oxide increases to above 1 is approximately equal to or greater than about 80 MHz; and

the magnetic body causes little or no attenuation of an electrical signal within a frequency range below a frequency at which a magnetic loss occurs and attenuates an electrical signal within a frequency range where the magnetic loss occurs.

19. A noise filter according to claim 18, wherein the magnetic body includes a hole, which is filled with one of glass, a resin, and a mixture of glass and a resin.

20. A noise filter according to claim 18, wherein the magnetic oxide is a Ni-Cu-Zn ferrite.

21. A noise filter comprising: 

a magnetic body and at least a pair of line conductors facing each other on major surfaces of the magnetic body such that the line conductors sandwich the magnetic body; wherein

the magnetic body is made of a magnetic oxide, and the frequency at which the magnetic loss of the magnetic oxide increase to above 1 is approximately equal to or greater than about 80 MHz; and

the magnetic body causes little or no attenuation of an electrical signal within a frequency range below a frequency at which a magnetic loss occurs and attenuates an electrical signal within a frequency range where the magnetic loss occurs.

22. A noise filter according to claim 21, wherein the magnetic body includes a hole, which is filled with one of glass, a resin, and a mixture of glass and a resin.

23. A noise filter according to claim 21, wherein the magnetic oxide is a Ni-Cu-Zn ferrite.